TEST THE ABS SYSTEM

Two simple tests will ensure proper operation of the Haldex PLC Select ABS System.

While still in the shop with the air system fully charged, apply 12 volt permanent power only from a battery cart. The valve should "blow down" and you should hear a brief shot of air. The ABS lamp should illuminate for about 3 seconds and then turn off. Repeat test with stoplight power only.

Next road test the trailer and its ABS system. Use a late model tractor to power up the system. When the ABS lamp turns off, bring the vehicle up over 6 miles per hour. Panic stop the vehicle to activate an ABS event. If the ABS lamp remains off, the system is functioning correctly.

In the event that either test failed, refer to detailed testing procedures in the enclosed service manual (L30030).

Congratulations, this replacement kit has upgraded this vehicle's brake system to the newest technology available - Power Line Carrier or PLC. And Haldex stands behind the product with the strongest warranty available for in-service repair kits, one full year.

Additionally, you may find valuable other options available from the Haldex ABS Family of products that include an e-odometer which keeps on-board mileage and is readable with either the Info Center or the PC Program.

AQ960503 Kit Components

(1) PLC Select Valve/ECU Assembly - 6 Port
(1) Power Cord Extension - 6 Foot
(2) Sensor Extensions - 18 Inch
(1) Installation Instructions - L31203
(1) PLC Service Manual - L30030

Haldex Available Diagnostic Tools (Not Included)
PLC PC Computer Program - AQ15848
PLC Info Center - Hand Held - AQ15849
Blink Codes are standard.

If you have any questions on this product or any of the innovative products offered by Haldex, contact your local distributor for complete details. Technical service or troubleshooting help can be obtained by calling Haldex and asking for the ABS Technical Support line at 800-643-2374.

Haldex Commercial Vehicle Systems

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11/03 500 ART L31203

Haldex Trailer Universal ABS 2S/1M PLC Select Replacement Kit (AQ960503)

The Haldex Universal 2S/1M PLC Select ABS Replacement Kit, part number AQ960503, is designed to replace or upgrade to PLC Technology all 2S/1M trailer systems, regardless of the manufacturer or year of production. The kit includes items most commonly needed when replacing competitive units. Some additional components unique to the vehicle being upgraded should be expected.

All makes of 2S/1M ABS systems utilizing a separate spring brake control valve, in a standard line-haul tandem trailer configuration can be replaced with this kit.

Do not use kit AQ960503 to replace the Haldex FFABS System, as the spring brake control is integral in the ABS Valve and not controlled separately.

SAFETY

Prepare the vehicle as with any valve replacement procedure, by releasing all air pressure, chocking the wheels, and ensuring adequate vehicle support.

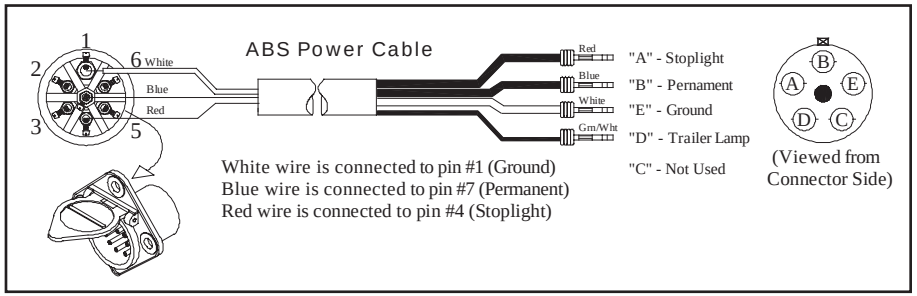
VERIFY EXISTING SYSTEM TO BE REPLACED

Visually inspect to ensure the trailer uses a 2 Sensor/1 Modulator Valve (2S/1M) ABS system, with a separate spring brake control valve.

Kit AQ960503 will replace 2S/1M trailer ABS systems made by Bendix, Eaton Bosch, Haldex Mod 1, Meritor and Wabash. Contact Haldex if the existing system is other than the above for the components required to retro-fit and upgrade the system to PLC Technology.

REMOVE EXISTING ABS SYSTEM

1. Remove the ABS power cord from the valve/ECU assembly and the trailer harness if equipped.
2. Remove the 2 sensors from the ECU only, not the wheel end.
3. Remove the air delivery hoses from the bottom of the valve only, not the brake chambers.
4. Remove the air control line from the top of the valve.
5. Remove the existing valve/ECU assembly (Note: the Wabash valve and ECU may be separate, remove both pieces).



VERIFY AND TEST EXISTING POWER CORD

1998 or newer trailers should be equipped with a standard 5 way round power cord drop-out from a harness. Test each pin to ensure proper operation.

On older trailers, use Haldex Kit # AQ15473 to add the standard 5 way power cord drop-out. Then test each pin to ensure proper operation.

VERIFY AND TEST SENSORS

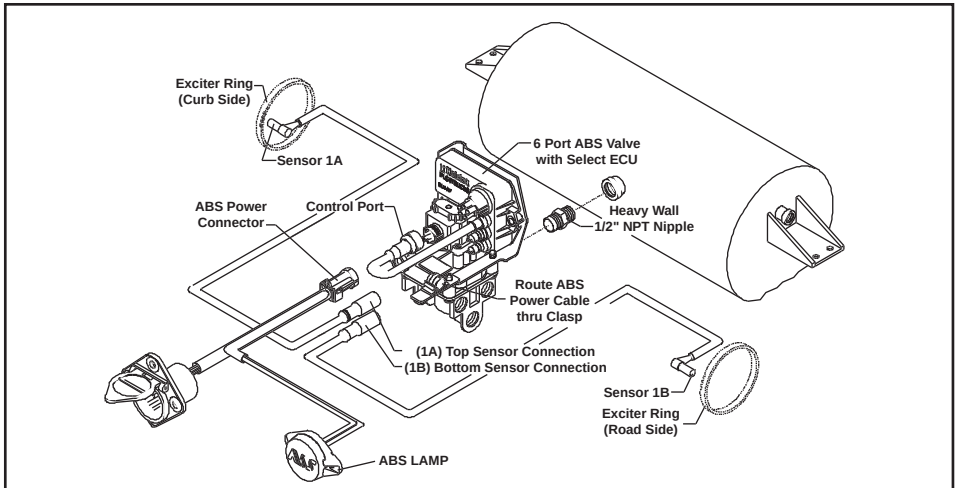
Note - Only Bendix sensors CAN NOT be used with this kit and should be replaced BEFORE PROCEEDING. Others are interchangeable and may be re-used.

Test for OHM resistance of the sensor at the valve end. Ensure the OHM reading is between 980 and 2350. Replace and test new sensor if OHM readings are outside limits BEFORE PROCEEDING.

Properly seat the sensors at the hub by pressing the sensor against the exciter ring.

Test for sensor voltage output by elevating the wheel end and spinning the wheel at least one revolution per two seconds. Output must exceed 200 millivolts. Low output is caused by either contaminate build-up on the exciter ring, or a faulty sensor. If output is below 200 millivolts, correct and re-test BEFORE PROCEEDING.

If more service is required to bring the sensors up to satisfactory performance levels, additional detailed technical service information is included in the enclosed service manual (L30030).



Note: Clean and inspect all reinstalled connections. Apply a thin coat of dielectric grease to all electrical connection prior to installation.

INSTALL THE NEW HALDEX ABS SYSTEM

Note - Haldex suggests a light application of dielectric grease to all terminal connections on ABS systems during assembly.

1. On the new Haldex ABS Valve/ECU assembly, connect the wire from the ECU to the Modulator Valve Solenoid, hand tighten only.
2. Install the new Haldex PLC Select ABS Valve/ECU Assembly on the air tank utilizing a heavy wall plated nipple.
3. Replace the air control line to the control port on the front of the new valve.
4. Replace the air delivery hoses to the bottom of the valve. Plug unused delivery ports.
5. Install the curbside sensor to the upper terminal (S1A) on the ECU, utilizing the 18" extension if needed to prevent interference.
6. Install the roadside sensor to the lower terminal (S1B) on the ECU, utilizing the 18" extension if needed to prevent interference.
7. Install blue sensor connection clip.
8. Install the new 6' power cord from the trailer harness, loop through cable clasp on valve and attach to ECU. Longer power cords are available if needed.

TEST AIR SYSTEM OPERATION

1. Visually inspect to ensure no hoses or wires are left unattached.
2. All loose hoses and wires need to be secured to prevent problems. Haldex suggests sensor wires be attached to the brake hoses in several places. With Haldex sensors, use clip AL920809, other sensors with smaller cable O.D. use clip AL920810.
3. Fully charge the trailer air system and test for leaks.
4. Operate the spring brake system, test for leaks and proper application and release of the spring brakes.
5. Operate the service brake system, test for leaks and proper applications and release of the service brakes.